



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,344	05/07/2001	Hiroshi Yokoyama	PW 0277195 TK(F)-060-US	1120
909	7590	11/13/2003	EXAMINER	
PILLSBURY WINTHROP, LLP P.O. BOX 10500 MCLEAN, VA 22102			FONTAINE, MONICA A	
			ART UNIT	PAPER NUMBER

1732

DATE MAILED: 11/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/849,344

Applicant(s)

YOKOYAMA ET AL.

Examiner

Monica A Fontaine

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Claim Objections***

Claims 1 and 4 are objected to because of the following informalities: It is believed the word "an" has been mistakenly omitted in the following places:

Claim 1, line 7, after the word "of"

Claim 4, line 4, after the phrase "a shot of"

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakumura et al. (U.S. Patent 5,518,390). Regarding Claim 1, Nakumura et al., hereafter "Nakumura," show that it is known to carry out an injection control method, wherein molten material is injected into a mold by an injection cylinder unit (Abstract), comprising the steps of: setting target velocity data specifying injection operation required for the injection cylinder unit in advance (Column 2, lines 24-26); performing a first shot of an injection operation actually, and recording command data provided to the injection cylinder unit and detecting velocity data indicating the operation performed by the injection cylinder unit during the first shot of injection operation (Column 1,

Art Unit: 1732

lines 60-63; Column 2, lines 24-28); determining a difference between the detected velocity data and the target velocity data and calculating a correction value based on the difference (Column 2, lines 34-41), using the calculated correction value and generating command data for a second shot of injection operation (Column 2, lines 34-41, 46-54; Column 3, lines 4-15); and operating the injection cylinder unit by providing to it the command data for the second shot of injection operation (Column 2, lines 46-54; Column 3, lines 4-15).

Regarding Claim 2, Nakumura shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein the correction value is obtained by operating the injection cylinder unit for a predetermined number of injection shots by the ordinary injection position feedback control (Column 3, lines 60-67; Column 4, lines 1-29), and thereafter, the control is shifted to open loop control of injection velocity by command data generated from the correction value and the previous command data (Column 2, lines 49-56; Column 30-37).

Regarding Claim 5, Nakumura shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein in setting the target velocity data, a pattern in terms of position and velocity form specifying injection operation is set in advance by a user, the pattern being converted into time-series position command data in terms of position and time so as to be used for injection position feedback control, as well as the pattern being converted into target velocity in terms of velocity and time (Column 3, lines 60-67; Column 4, lines 1-29).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1732

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakumura, in view of Bulgrin (U.S. Patent 5,997,778).

Regarding Claims 3 and 4, Nakumura shows the process as claimed as discussed in the rejection of Claim 1 above, but does not teach a concept of delay. Bulgrin shows that it is known to carry out an injection control method wherein (Claim 3) a value of servo delay in the injection cylinder is set in advance (Column 21, lines 21-24), and in calculating the correction value, the difference between the detected velocity data and the target velocity data is calculated in a state that the phase of the detected velocity data is advanced by the servo delay (Column 21, lines 21-31), and (Claim 4) adjustment of the servo delay is made for the entire injection molding shot operation (Column 21, lines 21-48; It is noted that a low-velocity section, a high-velocity section, and a deceleration section would be included in the range over which Bulgrin applies his delay concept.). Bulgrin and Nakumura are combinable because they are concerned with a similar technical field, namely, that of injection molding control methods. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to introduce Bulgrin's concept of delay into Nakumura's control method in order to make the control technique more accurate.

Art Unit: 1732

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A Fontaine whose telephone number is 703-305-7239.

The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianni can be reached on 703-305-5493. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Maf  
November 7, 2003



**MICHAEL COLAIANNI  
PRIMARY EXAMINER**